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EXAMINER
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LUM, LEON YUN BON

ART UNIT	PAPER NUMBER
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1641

DATE MAILED: 05/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/830,557	<b>Applicant(s)</b> GLENSBJERG, MARTIN	
	<b>Examiner</b> Leon Y Lum	<b>Art Unit</b> 1641	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 07 April 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 130-173 is/are pending in the application.
- 4a) Of the above claim(s) 130-162 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 163-173 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 May 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☒ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>07 April 2003</u> . | 6) <input type="checkbox"/> Other: _____  |

***Election/Restrictions***

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Group I, claims 130-162, drawn to a method and system for the assessment of at least one parameter of particles in a liquid analyte material, classified in class 422, subclass 68.1.
- II. Group II, claims 163-173, drawn to a device for the assessment of at least one parameter of particles in a liquid analyte material, classified in class 422, subclass 103.

2. The inventions are distinct, each from the other because of the following reasons:

The inventions listed as Groups I and II do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: Group I includes a system comprising two apparatuses, a device through which liquid can be introduced and a detection device, and means for detecting and processing spatial image data. Group II lacks the special technical features of the detection device and image detection and processing. Group II also includes a means for disengaging itself from a detection device, which is a special technical feature that Group I lacks.

3. During a telephone conversation with Harvey Jacobson, Jr. (Reg. No. 20,851) on 4/19/04 a provisional election was made with traverse to prosecute the invention of

Art Unit: 1641

Group II, claims 163-173. Affirmation of this election must be made by applicant in replying to this Office action. Claims 130-162 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

### **DETAILED ACTION**

#### ***Priority***

4. Acknowledgment is made of applicant's claim for foreign priority based on an application filed in Denmark on November 05, 1998. It is noted, however, that applicant has not filed a certified copy of the PA 1998 01433 application as required by 35 U.S.C. 119(b).

#### ***Drawings***

5. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description:

Reference signs 211-212, indicated as being in Figure 2 and described as a "piston" and "piston cylinder", respectively (page 28, line 7 and page 32, line 24), are not shown in Figure 2.

Art Unit: 1641

Reference signs 301 and 303, indicated as being in Figure 3 and described as an “external power source” and a “rechargeable battery”, respectively (page 29, lines 8-9), are not shown in Figure 3.

Reference signs 204 and 213-216, indicated as being in Figure 6 and described as the “reaction component chamber” and “recesses”, respectively (page 29, lines 11-13), are not shown in Figure 6.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

6. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description: Reference signs 202-203 in Figure 2 and reference signs 801-803 in Figure 3. A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign(s) in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

7. The drawings are objected to because Figure 1 shows the label 609 that is not mentioned in the description. However, a reference sign 109, described as “the outlet” (page 24, line 19) is mentioned in the description and it seems to refer to the label 609 that is at the end of the arrow flow. In addition, all the other labels start with the numeral

Art Unit: 1641

1 and it seems as if 609 should be 109. However, if this is not the case, then the drawings are objected to as failing to comply with 37 CFR 1.84(p)5 as both including a reference sign that is not mentioned in the description and not including a reference sign that is mentioned in the description. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### ***Specification***

8. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

9. The abstract of the disclosure is objected to because it contains the legal term "means" in line 10. The first sentence also contains the phrase "The present invention relates to" (line 1), which is similar to the phrase "The disclosure concerns", which is listed above, and should be avoided since it is a phrase which can be implied.

Correction is required. See MPEP § 608.01(b).

### ***Claim Objections***

10. Claim 163 is objected to because of the following informalities: line 5 of the claim contains the term “been”. It seems as if the term should be rewritten as “be”.

Line 8 of the claim contains the term “which”. It seems as if the terms “a” and “the” should be inserted prior to and after the term “which”, respectively.

Appropriate correction is required.

11. Claim 164 is objected to because of the following informalities: line 2 of the claim contains the phrase “in or from which”, which is unclear and confusing. Does Applicant mean to say “in which”, “from which”, or another term entirely? Appropriate correction is required.

12. Claim 166 is objected to because of the following informalities: line 2 of the claim contains the term “therethrough”. This term is not a formal English word and it is unclear and confusing as to what is meant by the term in regards to the phrase “laminar flow” of the same line. Appropriate correction is required.

13. Claim 169 is objected to because of the following informalities: line 1 of the claim contains the term “which”. It seems as if the terms “a” and “the” should be inserted prior to and after the term “which”, respectively. Appropriate correction is required.

Art Unit: 1641

14. Claim 170 is objected to because of the following informalities: line 2 of the claim contains the phrase "allow on", which is unclear and confusing. Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

15. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

16. Claims 166-167, 170-171, and 173 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

17. Claims 166-167 recite the limitation "the part of the flow channel" in line 1 of the claims. There is insufficient antecedent basis for this limitation in the claim.

18. In claim 166, line 2, the term "and/or" is unclear and indefinite. It is not clear whether the claim requires both the limitations of "substantial laminar flow" (line 2) and "comprises one or more mixing chambers" (line 2), or just one of the limitations. Proper correction is required.



Art Unit: 1641

19. In claim 168, line 4, the term "and/or" is unclear and indefinite. It is not clear whether the limitation "speed reduction valves" is included in the Markush group.

Proper correction is required.

20. In claim 170, line 3, the term "one or several of" is unclear and indefinite. It is not clear whether the claim is meant to include just one or more than one of the limitations that follow the term. Proper correction is required.

21. In claim 172, line 2, the phrase "in a direction substantially parallel to an exposing window" is unclear and indefinite. It is not clear what is meant by the term "parallel" in relating the sample compartment dimensions and exposing window. Does Applicant mean that the dimensions are in a plane that is parallel to the exposing window? If so, then the term "direction" should be replaced by the term "plane". If not, then another phrase is necessary to present a less unclear and indefinite limitation. Proper correction is required.

22. The term "substantial" in claim 166, line 2, is a relative term which renders the claim indefinite. The term "substantial" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It is not clear to one of ordinary skill in the art at the time of the invention when an appropriate laminar flow would be obtained.

23. The term "substantially" in claim 167, line 2, is a relative term which renders the claim indefinite. The term "substantially" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It is not clear to one of ordinary skill in the art at the time of the invention when an appropriate turbulent flow would be obtained.

24. The term "substantially" in claim 172, line 2, is a relative term which renders the claim indefinite. The term "substantially" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It is not clear to one of ordinary skill in the art at the time of the invention when an appropriate sample compartment is obtained, relative to an exposing window.

25. Regarding claim 170, the phrase "e.g.", in line 3, understood as "for example" renders the claim indefinite because it is unclear whether the limitation(s) following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

26. Where applicant acts as his or her own lexicographer to specifically define a term of a claim contrary to its ordinary meaning, the written description must clearly redefine the claim term and set forth the uncommon definition so as to put one reasonably skilled

Art Unit: 1641

in the art on notice that the applicant intended to so redefine that claim term. *Process Control Corp. v. HydReclaim Corp.*, 190 F.3d 1350, 1357, 52 USPQ2d 1029, 1033 (Fed. Cir. 1999). The term "thickness" in claim 171, line 2, is used by the claim to mean "the interior of the sample compartment" (line 2), while the accepted meanings are "width", "length", "depth", or "cross-section", depending on which dimension the claim is referring to. The term is indefinite because the specification does not clearly redefine the term and it is not clear which dimension of the sample compartment is being referred to.

27. A broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "such as" and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949).

Art Unit: 1641

In the present instance, claim 171 recites the broad recitation “20 $\mu$ m and 2000 $\mu$ m” (line 2), and the claim also recites “20 $\mu$ m and 1000 $\mu$ m” (line 2) and “20 $\mu$ m and 200 $\mu$ m” (line 3), which are narrower statements of the range/limitation.

Also in the present instance, claim 173 recites the broad recitation “0.01  $\mu$ l and 20  $\mu$ l” (line 2), and the claim also recites “0.04  $\mu$ l and 4  $\mu$ l” (line 3), which is the narrower statement of the range/limitation.

### ***Claim Rejections - 35 USC § 102***

28. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

29. Claims 163-165, 167-169, 171, and 173 are rejected under 35 U.S.C. 102(e) as being anticipated by Wilding et al (USP 5,726, 026).

In the instant claims, Wilding et al teach a device that includes a detection chamber (column 15, line 28) which has an optical window disposed over the chamber (column 15, line 29) (sample compartment comprising an exposing domain). Wilding et al also teach that in one application of the device, the cholesterol content of a sample

Art Unit: 1641

may be determined (analyte material) by applying a sample via inlet port 152c (inlet through which a volume of a liquid sample representing the analyte material can be introduced), wherein it flows through channel 154d to the tortuous mixing/reaction chamber (column 15, lines 13-18 and Figure 9) (a flow system comprising at least a channel allowing at least a portion of the volume of the liquid sample to flow within the device).

Also regarding the instant claims, Wilding et teach that the device can be used in combination with an appliance that has optical detection means, wherein the device is held in a nesting site (column 15, lines 62-67 and column 16, lines 1-3) (arranging the device in relation to a detection device). Wilding et al does not explicitly teach the limitation of disengaging the device from the detection device. However, Wilding et al teach that the device is disposable, wherein all sample, unreacted reagent and reaction products remained confined in the device for subsequent disposal (column 15, lines 59-61). Since the device is disposable, it is inherently mobile and not permanently attached to the detection device. Therefore, it is obvious to one of ordinary skill in the art at the time of the invention that the device can be disengaged from a detection device.

Although Applicant mentions a detection device in "which detection device comprises...processing means of the detection device." (lines 8-13), the detection device is not claimed and therefore not given patentable weight. The above lines referring to the detection device have thus been excluded from the prior art search.

Art Unit: 1641

Regarding claims 164-165, Wilding et al teach that cholesterol esterase, buffer (one or more reaction components), and sample are applied to inlet ports 152a, 152b, and 152c, respectively (initially loaded), and that the mixture (added to at least a portion of the volume of the liquid sample representing the analyte material) flows through channel 154d (compartment or flow channel part) to the tortuous mixing/reaction chamber (column 15, lines 14-18 and Figure 9).

Regarding claim 165, Wilding et al teach that protein binding substances (reaction components) introduced in aqueous solution may be retained in a mesoscale structure in lyophilized form (column 10, lines 57-59) (is in freeze-dried form).

Regarding claim 167, Wilding et al teach a device where flow channel 179 (part of the flow channel) may include structural elements (at least one bend or obstruction) to promote turbulent flow (column 17, lines 44-45 and Figure 10A).

Regarding claim 168, Wilding et al teach a device with valves (one or more means for regulating velocity of the flow) in the devices that may be utilized to direct fluid flow (column 20, lines 63-67).

Regarding claim 169, Wilding et al teach a device that can function as a filter (column 9, line 6), test for the concentration of a molecular or ionic analyte (column 5, lines 31-32), and apply a magnetic field to effect filtration of particulate matter from the test sample using magnetic particles (column 9, lines 29-33).

Regarding claim 171, Wilding et al teach that the detection chamber has a cross-sectional dimension on the order of 0.1  $\mu\text{m}$  to 1000  $\mu\text{m}$  (column 7, lines 60-61).

Art Unit: 1641

Regarding claim 173, Wilding et al teach that a pre-determined sample volume will ordinarily be on the order of about 1  $\mu$ L, wherein the pre-determined sample volume is in a metering chamber for analysis (column 16, lines 56-60). Although Wilding et al does not explicitly teach that the metering chamber will be on the order of about 1  $\mu$ L, it is inherent that the chamber is at least 1  $\mu$ L since it can hold sample volume of that amount.

### ***Claim Rejections - 35 USC § 103***

30. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

31. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

32. Claim 166 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wilding et al (USP 5,726,026) in view of Yager et al (USP 5,716,852).

Art Unit: 1641

Wilding et al reference has been disclosed above and additionally describes a device with a tortuous mixing/reaction chamber (column 14, lines 66-67; column 15, lines 1-21; and Figure 9) (comprises one or more mixing chambers). However, Wilding et al reference fails to disclose a device wherein part of the flow channel provides substantial laminar flow.

Yager et al teach that practically all flow in microstructures is laminar due to extremely small inertial forces in such structures, and that the laminar flow allows movement of different layers of fluid and particles next to each other in a channel without any mixing other than diffusion (column 3, lines 8-12).

Therefore, it would have been obvious to include in the device of Wilding et al, laminar flow of fluid in a channel, as taught by Yager et al, in order to allow movement of different layers of fluid and particles next to each other in a channel without mixing other than diffusion.

33. Claim 170 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wilding et al (USP 5,726,026) in view of Masuda et al (USP 4,472,498), Ozaki et al (USP 5,754,289), Fesik et al (USP 5,804,390), and Allen et al (USP 5,190,857).

Wilding et al reference has been disclosed above, but fail to disclose that the detection chamber (compartments or domain) can allow spectrophotometric measurement by mid-infrared attenuation, near-infrared attenuation, visible attenuation, ultraviolet attenuation, photoluminescence, raman scatter or nuclear magnetic resonance.



Art Unit: 1641

Masuda et al teach a detection layer (column 6, line 15 and Figures 1-6) (one or more compartment or domain) and spectrophotometry is used as the optical measurement system with ultraviolet rays (ultra-violet attenuation), infrared rays (mid-infrared and near-infrared attenuation), and visible rays (visible attenuation) (column 18, lines 63-68 and column 19, lines 1-2) to measure the concentration of a substance which plays an important biochemical role using a protein capable of specifically binding the substance through competitive binding (column 1, lines 8-13).

Ozaki et al teach the use of an FT-Raman spectrophotometer to measure Raman scattering spectra (Raman scatter) from a cell holder (column 6, lines 11-15) (compartments or domain) to measure a vital substance (column 2, lines 56-57).

Fesik et al teach the use of a nuclear magnetic resonance spectroscopy to follow the changes in chemical shifts of a target molecule upon the addition of ligand compounds in order to provide a rapid and efficient screening method for identifying ligands that bind to therapeutic target molecules (column 5, lines 38-46).

Allen et al teach the use of photoluminescence spectroscopy to detect low levels of analytes, including particles, cells, and cell fragments (column 2, lines 27-29 and column 3, lines 1-18).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to include in the device of Wilding et al, a method measuring the detection layer using spectrophotometry with ultraviolet rays, infrared rays, visible rays, Raman scattering spectra, nuclear magnetic resonance, and photoluminescence, as taught by Masuda et al, Ozaki et al, Fesik et al, and Allen et al, respectively, in order to

Art Unit: 1641

measure the concentration of a substance, measure a vital substance, follow the changes in chemical shifts of a target molecule, and detect low levels of analytes, respectively.

34. Claim 172 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wilding et al (USP 5,726,026) in view of Kricka et al (USP 5,744,366).

Wilding et al reference is disclosed above, but fail to disclose that a sample compartment has dimensions, in a direction substantially parallel to an exposing window, in the range between 1mm by 1mm and 10 mm by 10 mm.

Kricka et al teach a device with chambers (sample compartment) generally having widths and lengths on the order of 1 mm or larger wherein the chamber is fabricated in a substrate and a cover (exposing window) is disposed over the substrate (direction parallel to an exposing window) (column 8, line 67 and column 9, lines 1-12) to allow adequate cell movement within the chamber (column 8, lines 59-65).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to include in the device of Wilding et al, a device with chambers generally having widths and lengths on the order of 1 mm or larger, wherein the chamber is fabricated in a substrate and a cover is disposed over the substrate, as taught by Kricka et al, in order to allow adequate cell movement within the chamber.

### ***Conclusion***

Art Unit: 1641

35. The prior art made of record and not relied upon are considered pertinent to applicant's disclosure.

Flossdorf et al (USP 5,087,425) teach a device for flow-injection with pumps, a valve, and detectors.

Wilding et al (USP 5,304,487) teach a mesoscale flow system that includes flow channels, a pump, cell binding, and detection methods.

Wilding et al (USP 5,486,335) teach a microfabricated flow system with channels, a pump, and detection methods.

Wilding et al (USP 5,587,128) teach a microfabricated device with a flow channel, reaction chamber, and reagents.

Horiuchi et al (USP 5,594,544) teach a method and apparatus for analyzing particles in a flow chamber with a sample fluid flow.

Wilding et al (USP 5,637,469) teach a mesoscale flow system with an inlet port, flow channels, binding moieties, and methods of detecting analytes.

Wade et al (USP 5,695,720) teach a flow network with pumps, valves, and detectors for analyzing samples.

Gavin et al (USP 5,731,212) teach a testing device for analyzing a fluid sample with conduits, reagents, a pump, and detection methods.

Farrell et al (USP 5,788,927) teach a device with a pump assembly, valves, chambers, flow control, and fluid mixing to analyze a sample.

Carver, Jr. et al (USP 5,840,254) teach an apparatus for mixing fluids.

Art Unit: 1641

Chupp et al (USP 5,812,419) teach a method and device for analyzing blood, with a flow system, flow channels, and analysis using spectrophotometric techniques.

Modell et al (USP 5,813,987) teach a device for spectrophotometric measurement in the infrared-ultraviolet spectrum.

36. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leon Y Lum whose telephone number is (571) 272-2878. The examiner can normally be reached on 8:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Long Le can be reached on (571) 272-0823. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

LYL



LONG V. LE  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 1600

05/17/04